

Foamed Antenna Support for Very Large Apertures, Phase I

Completed Technology Project (2008 - 2008)



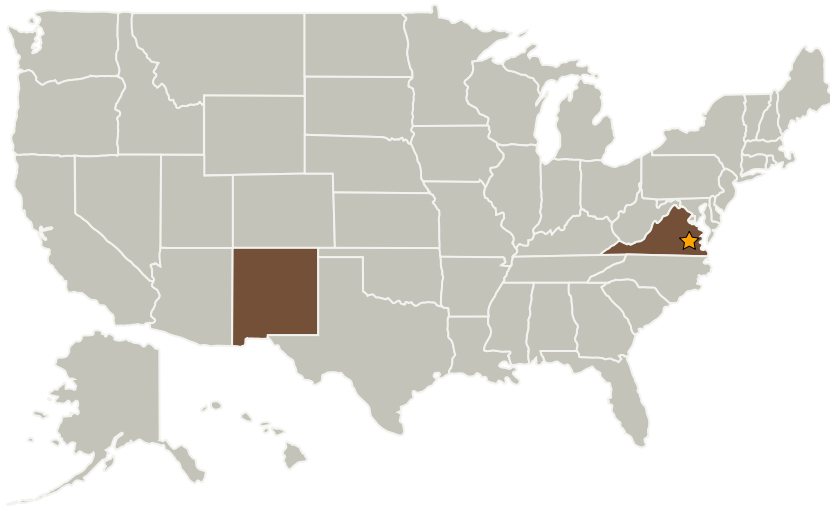
Project Introduction

The proposed Phase I program will demonstrate the feasibility of the in-space production of large aperture antenna structures. The use of a novel open cell foam, previously developed for NASA space antennas, will allow the deployment of reflectors at low cost and very low transport volume compared to currently used technologies like solid metal or mesh reflector. The use of a foam substrate also dampens thermal expansion distortions of the reflector shape, assuring high surface accuracy. The shape accuracy of the antenna will be ensured by using Rigidization on Command

TM

technology to form a rigid mold from an inflatable. This approach allows to verify the correct antenna shape before the structure is stabilized using foam. The development effort will be supported by computer modeling of the necessary strength parameters for a very large antenna structure based on foam support.

Primary U.S. Work Locations and Key Partners



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Organizational
Responsibility**Responsible Mission
Directorate:**

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Adherent Technologies, Inc.	Supporting Organization	Industry	Albuquerque, New Mexico

Primary U.S. Work Locations

New Mexico	Virginia
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Jan-michael Gosau

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - └ TX05.2 Radio Frequency
 - └ TX05.2.6 Innovative Antennas